Storage

THE HAWAIIAN FORESTER AND AGRICULTURIST

JANUARY, 1917

CONTENTS

	PAGE
Sandalwood Bulletin	3
Division of Forestry	4
Division of Plant Inspection	8
Division of Entomology	11
Division of Animal Industry	12
Division of Hydrography	15
A New Pineapple Pest of the West Indies	17
Public Forests for Recreation	22
Philippine Woods	24

VOL. XIV. PRICE, TEN CENTS NO. 1

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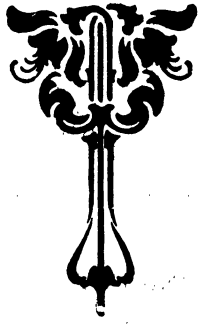
The Hawaiian Forester and Agriculturist

A Monthly Magazine of Forestry, Entomology, Animal Industry, Hydrography and Agriculture.

Issued under the direction of the Board of Commissioners of Agriculture and Forestry, Territory of Hawaii.



Address all communications to
DANIEL LOGAN
Editor "THE FORESTER"
P. O. Box 366, Honolulu, T. H.

For business relating to subscriptions or advertising, address
HAWAIIAN GAZETTE CO., LTD.,
Publishers, Honolulu, T. H.

Price 10c. per copy; $1.00 a year; Foreign, $1.25
Entered as second-class matter at the Post Office at Honolulu, Hawaii.

Board of Agriculture and Forestry

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The list includes both forest and ornamental trees, such as Silk Oak, Koa, various species of Eucalyptus, Golden and Pink Showers, Pride of India, Poinciana, Albizzia, etc. The price of the seed varies from 10 to 50 cents per ounce. The seedlings may be had for 2½ cents each, except a few kinds which are 5 cents. Seed of the various palms is also for sale; the price per 100 varying from $1.00 to $2.50. All seed is tested before being sent out, which insures its being good.

All communications in regard to seed or trees should be addressed to David Haughs, Forest Nurseryman, Box 207, Honolulu, Hawaii.

C. S. JUDD,
Superintendent of Forestry.

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To give information about insects free of charge is one of the duties of this Division, and Hawaiian readers are hereby invited to make inquiry in person and by mail. In order to be able to advise intelligently or send the right kind of useful insects for relief, we like and sometimes it is indispensable for us to see the insects suspected or caught in the act, also specimens of the injury. In a tin with a hole or two, or a wooden box, specimens may be mailed by parcels post. When specimens are not accompanied by letter always write your name and address in the upper left-hand corner of the package. Address all communications, SUPERINTENDENT DIVISION OF ENTOMOLOGY, P. O. BOX 207, HONOLULU, HAWAII.

EDW. M. EHRHORN,
Superintendent of Entomology.

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A complete list of the publications of the Board available for distribution (together with the titles of certain issues now out of print) is to be found on the cover of the last biennial report.

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The Division of Hydrography has on hand free publications relative to the water resources of the Hawaiian Islands. These publications furnish detailed data as to daily, monthly, mean, maximum, and minimum run-off of streams and ditches, and also cuts and maps pertaining to the different islands. These publications will be mailed free of charge on request.

The records and maps of this Division are available for inspection by any one who desires information relative to water resources, topography, etc. Blue print copies of hydrographic data relative to any stream, ditch, spring, etc., which may be under observation by this Division will be mailed free of charge on request.

G. K. LARRISON,
Superintendent of Hydrography.

Forestry
Penn. State College
12-6-38
v.14, no.1-3, 6, 7, 9-12

THE HAWAIIAN FORESTER AND AGRICULTURIST

VOL. XIV. HONOLULU, JANUARY, 1917. NO. 1

SANDALWOOD BULLETIN

"The Sandalwoods of Hawaii," Botanical Bulletin No. 3 of the Division of Forestry by Mr. Joseph F. Rock, Consulting Botanist, came off the press at the end of last month and has been distributed by mail. In this bulletin, Mr. Rock has described his revision of the genus Santalum into nine species and two varieties and has given a brief history of the utilization of this romantic and now rather rare tree family. It may be news to some that a shrub form of this tree, Santalum littorale, may still be found on the slopes below the road just beyond the Diamond Head lighthouse.

A copy of this bulletin will be mailed, on request, to those who have not already received it.

The appearance, with serious consequences, of a pineapple weevil in Jamaica, described in this issue, emphasizes the importance of a very rigid inspection of all plant introductions in this Territory, and of providing the very best facilities for such inspection on the waterfront.

The forest rangers from the eighteen national forests in California, in conference lately in Berkeley, were addressed by Chas. F. Stern, state highway commissioner, on the subject of coöperation by the state and federal governments in the building of roads. Commissioner Stern dwelt upon the fact that the funds provided by the federal government for road construction in California will be spent largely in coöperation with the state road commission. When Hawaii receives its share of federal aid for roads, as it probably will when its claims therefor are properly laid before the federal government, the territorial bureau of forestry will be able to render valuable coöperation with whatever officials have the execution of the work in charge.

Division of Forestry

Honolulu, January 16, 1917.

Board of Commissioners of Agriculture and Forestry, Honolulu.

GENTLEMEN:—I respectfully submit the following routine report of the Division of Forestry for the month of December, 1916:

KAUAI TRIP.

From December 12 to 16, I was on the Island of Kauai with Land Commissioner Rivenburgh and Superintendent of Hydrography Larrison making, in conjunction with the Chamber of Commerce of Kauai, an examination of government forest reserve lands in the region of the head of Waimea canyon, looking particularly for suitable summer camp sites. I found the climate, scenery and charm of the region more delightful than ever and also a variety of situations which will offer, when the land reverts to the Territory, at the expiration of the present leases, suitable camping places for those who desire to put in more or less permanent camps with the idea of returning each summer, for those who merely wish to camp for a week or so in tents, and for those who are interested only in the scenery of the canyon and care to spend not more than one night. By lease expiration some of the land will revert to the government on December 27 of this year and the rest not until June 1, 1920. Before then a plan for the issuing of camping permits in a systematic manner, and for their administration on the ground by a forest ranger will be worked out. It is proposed also to add more land to the present reserve in this region so as to include the extensive forest and more camp sites in the region of Puukapele on the edge of Waimea canyon.

On this same trip a visit was made to Kukuiolono park and the Papapaholahola Spring Reserve where Mr. Walter D. McBryde has done extensive tree planting with very successful and pleasing results.

FOREST PLANTING.

The four men have continued tree planting under my personal supervision on the Manoa Ranger Station, Oahu, and have to date set out by various spacing over 50 different kinds of mostly timber trees in various quantities. These have been accurately marked with redwood posts and labeled so that there will be no possibility of losing their identity.

On the Kealia Forest Reserve, Kauai, Ranger Kaina D. Lovell has continued tree planting on the Kamalomalo flats and to date

has planted out a total of 9279 trees consisting of silk oak, swamp mahogany, lemongum and Japanese cedar.

This recent planting on government forest reserve lands is in addition to that which has been done in Makiki on the Honolulu Watershed Forest Reserve for the past three years, and it is planned to extend it to various forest reserves as opportunity and means are presented.

Postal reply cards were sent out at the end of the month to all tree planters in the Territory in order to ascertain for the annual report the number and kinds of trees planted during the year 1916 on private lands throughout the islands.

SANDALWOOD BULLETIN.

Botanical Bulletin No. 3 of this Division, "The Sandalwoods of Hawaii," by Mr. Joseph F. Rock, Consulting Botanist, came off the press on December 28, 1916, and has been mailed out to those whom it will interest and to public libraries.

MAKIKI SQUATTERS.

The free permits to the native Hawaiians granting them the privilege to reside in lower Makiki Valley in the Honolulu Watershed Forest Reserve were renewed for the year 1917.

Respectfully submitted,

C. S. JUDD,
Superintendent of Forestry.

REPORT OF FOREST NURSERYMAN.

Honolulu, December 30, 1916.

Superintendent of Forestry, Honolulu.

DEAR SIR:—I herewith submit a report of the principal work done during the month of December, 1916:

NURSERY.

Distribution of Plants.

	In Boxes Transplanted.	Pot Grown.	Total.
Sold	...	280	280
Gratis	450	740	1190
	450	1020	1470

Collections.—Government Realizations.

Collections on account of plants sold amount to	$ 5.80
Rent of office building, Nursery grounds, for October	35.00
1 Mexican saddle	35.00
Total	$75.80

PRESERVATION FOREST RESERVES.

Rent of premises at Half-way House, Tantalus, for October, November and December	$30.00
For use of land and gathering ti leaf, Kalawahine, Pauoa Valley, October, November, December	12.50
Rent of small piece of land, Pauoa Valley, 3 months	.75
Nine loads of black sand from Makiki Valley	2.25
Total	$45.50

PLANTATION COMPANIES AND OTHER CORPORATIONS.

The distribution of plants under this heading amounts to 7000 in seed boxes and 600 in transplant boxes. Owing to bad weather our distribution for December has been delayed. We will complete all our large orders during the latter part of January and first part of February. We have 150,000 about ready to ship.

MAKIKI STATION.

Owing to the great demand for trees during the past two or three months our stock at this station has been considerably reduced. Our efforts are now directed toward the building up of a large stock again.

The machinery for the short log saw mill arrived a few weeks ago. We will be ready to start cutting up logs when the Honolulu Iron Works has completed the installing. We have started work on the additions to the buildings, and the space in front is being enlarged by cutting away the bank and leveling.

HONOLULU WATERSHED.

The lower end of Hering Valley is now ready for planting. Most of the upper part of this valley is planted and the trees are doing very well. Arrangements are also being made for the planting of a piece of land above the planted forest on the Kalawahine tract. We have a large number of koa and other trees ready for this work and planting will commence during the month of January.

ADVICE AND ASSISTANCE.

At the request of people residing in and around the city the writer has given advice and assistance as follows: Calls made, 6; advice by telephone, 9; advice by letter, 5; people calling at Nursery for advice, 12. Total, 32.

Respectfully submitted,

DAVID HAUGHS,
Forest Nurseryman.

Division of Plant Inspection

Honolulu, Dec. 31, 1916.

Board of Commissioners of Agriculture and Forestry, Honolulu, Hawaii.

GENTLEMEN:—I respectfully submit my report of the work done by the Division of Plant Inspection for the month of December, 1916, as follows:

During the month there arrived at the port of Honolulu 47 vessels, of which 22 carried vegetable matter and one, sailing vessel, sand. Of these vessels, six passed by the way of the Panama Canal in transit to the Orient.

Disposal.	Lots.	Parcels.
Passed as free from pests.....	1346	23,144
Fumigated	9	14
Burned	44	45
Total	1399	23,203

Of these shipments, 22,912 packages arrived as freight, 161 packages as baggage of passengers and immigrants, and 130 packages as mail matter.

RICE AND BEAN SHIPMENTS.

During the month 13,249 bags of rice and 2286 bags of beans arrived from Oriental ports and after careful inspection were passed as free from pests.

PESTS INTERCEPTED.

Approximately 3561 pieces of baggage belonging to passengers and immigrants from foreign countries were examined, and 21 packages of fruit and 21 packages of vegetables were seized and destroyed by burning.

On December 4 a passenger brought a pine tree infested with aphis (Chermes species), which was fumigated before delivery.

On December 5 two packages of seeds arrived by mail from Argentina for the Forester and were fumigated as a precaution before delivery.

On the same day a package of acorns was brought by a passenger from California. Some of the seeds had beetle grubs in them and one acorn had the larva of a moth. All were fumigated and the infested acorns were destroyed.

On December 7 a package of tree seeds arrived from Manila by mail for the Forester and was fumigated before delivery.

A case of yams packed in rice chaff was found in the baggage of an immigrant from Japan. A nest of ants (*prenolepis longicornis*) was found in the packing material, and box and contents were fumigated with carbon bisulphide for 48 hours; when again examined all ants were dead.

A passenger brought a bunch of bananas from Fiji December 8 on the S. S. Niagara which was seized and returned on board.

On the same steamer a passenger brought a hydrangea plant from Sydney which was fumigated and the soil removed before delivery.

On December 10 five packages of coffee seed came by mail from Java for the Hawaii Experiment Station. The seed was removed from the packing, and treated in a 4% solution of formalin; the packing was destroyed. The young plants will be in quarantine for six months.

December 18 a passenger brought a five-needle pine tree in his baggage, also an infested maple tree. Both were destroyed by burning, the pine tree being contraband under ruling of the Federal Horticultural Board, Washington, D. C.

One ornamental plant with the same steamer was fumigated and the soil removed before delivery.

On December 19 the crew of the S. S. Ventura tried to land some alligator pears from Samoa. These were seized and destroyed.

Several palms in a shipment of plants from California on December 25 had to be fumigated on account of mealy bug infestation.

On December 7 two cases of beneficial insects arrived on the S. S. Persia Maru for Hawaiian Sugar Planters' Association experiment station. These were opened in my presence by Mr. Swezey and all material and waste has been destroyed after the parasites were secured.

HILO INSPECTION.

Brother M. Newell of Hilo reports the arrival of five steamers, four of which brought vegetable matter, consisting of 270 lots and 5322 packages of fruits and vegetables. On December 11 the S. S. Seiyu Maru arrived direct from Japan, bringing 6215 bags of rice, 209 bags of beans, 20 bags of peanuts, 10 bags of millet and 2 boxes of yams. All of the above shipments were free from pests.

INTER-ISLAND INSPECTION.

Sixty-two steamers plying between the port of Honolulu and other islands were attended to during the month. The following shipments were passed as free from pests:

Taro	614	packages
Plants	171	packages
Vegetables	89	packages
Fruit	21	packages
Total passed	895	packages

The following packages were refused shipment, as they did not meet with the regulations pertaining to soil and infestations:

Plants	16	packages
Fruit	11	packages
Total refused	27	packages

Respectfully submitted,

E. M. EHRHORN,
Chief of Division of Plant Inspection.

Division of Entomology

Honolulu, Jan. 15, 1917.

Board of Commissioners of Agriculture and Forestry, Honolulu, T. H.

GENTLEMEN:—During the month of December the insectary handled 57,600 pupae of the melon fly, from which there were bred 1900 females and 1558 males of *Opius fletcheri*. The parasites were distributed as follows:

	Females.	Males.
Oahu:		
Sheridan Street	600	560
Kalakaua Avenue	715	540
Moanalua	675	605
Total	1990	1705

The corn leaf-hopper parasites have been put mostly at the U. S. Experiment Station (December 19, 35; December 20, 50), and have now become established there.

Very respectfully,

D. T. FULLAWAY,
Entomologist.

Division of Animal Industry

Honolulu, Jan. 23, 1917.

Board of Commissioners of Agriculture and Forestry, Honolulu, T. H.

GENTLEMEN:—I beg to submit herewith my report on the work of the Division of Animal Industry for the month of December, 1916:

BOVINE TUBERCULOSIS CONTROL.

The final result of the year's work shows that 5151 dairy animals were tested, of which number 148 head, or 2.87 per cent, were found to be affected with tuberculosis. All these animals were removed from the dairies and the greater majority destroyed under the direct supervision of this office.

As compared to the previous year, 1915, when the percentage of reactors was 3.08, the decrease in prevalence is noticeable and would undoubtedly have been much more so had this year's test included the more than 2000 head cattle belonging to the railway ranches which last year showed but a small fraction of one per cent of reactors.

On the Island of Hawaii 1836 head were tested, with 44 reactors, or 2.39 per cent. The final figures from Maui and Kauai have not yet come to hand.

IMPORTATION OF LIVE STOCK.

During 1916 the importations of live stock have fallen far below those of 1915. The number of swine, for instance, fell from 2042 to only 53 head, while mules fell from 567 to 432. Poultry importations only increased decidedly, from 1142 crates in 1915 to over 1800 during this year; and still it is believed that the Territory produced far more poultry during 1916 than was ever the case before, as rational poultry raising on a large scale has begun to develop on at least three of the principal islands.

DISEASES OF LIVE STOCK.

No outbreaks were reported during December. So far as the past year is concerned, the record is unprecedented in so far as absence of infectious and contagious diseases is concerned. Diseases of hogs especially have decreased, though influenza and spinal meningitis in horses and mules also have occurred less frequently than hitherto.

The subjects above referred to are fully discussed in the 1915-1916 report, the preparation of which has been in progress during the month and will be ready for the printer as soon as all the deputies are heard from.

QUARANTINE STATION.

In Honolulu as well as in Hilo the quarantine stations have repeatedly been almost totally inundated by the heavy rains, but although many animals happened to be at both stations no losses directly due to this condition occurred.

It has, however, been impossible to begin the work on the new dog kennels, and it will undoubtedly be wise not to attempt it until the weather moderates definitely.

Respectfully submitted,

VICTOR A. NÖRGAARD,
Territorial Veterinarian.

REPORT OF ASSISTANT VETERINARIAN.

Honolulu, January 5, 1917.

Dr. V. A. Nörgaard,
Chief of Division of Animal Industry,
Bureau of Agriculture and Forestry,
Honolulu, T. H.

SIRS—I beg to submit the following report for the month of December:

TUBERCULOSIS CONTROL:

The following dairy cattle were tested during the month:

	T.	P.	C.
M. Cabral	1	1	0
F. de Mello	16	15	1
S. Saito	10	10	0
T. Okomoto	9	9	0
A. M. McKeever	2	2	0
J. A. Castro	1	1	0
S. Mendonca	1	1	0
A. Ornellas	2	2	0

	T.	P.	C.
P. A. Ornellas	4	4	0
J. Rodriques	3	3	0
J. Nascimento	3	3	0
C. A. Vasconcellas	1	1	0
J. Santiago	2	2	0
M. Diaz	6	6	0
J. K. Gomes	1	1	0
O. R. & L. Co.	4	4	0
J. Moniz	1	1	0
J. A. Templeton	84	83	1
Carson Toat	43	42	1
J. F. Borris	18	18	0
Y. Ogawa	7	7	0
F. S. Lyman	45	45	0
Industrial School, Waialee	42	42	0

From the above list it will be seen that a total of 306 head of dairy cattle were tested out of which number 303 were passed and tagged and three condemned and branded.

IMPORTATIONS OF LIVE STOCK.

S. S. Matsonia, San Francisco: 2 dogs, H. K. Castle; 1 dog, Mrs. L. Andrews; 1 dog, R. W. Shingle; 1 dog, W. F. X. Co.

S. S. China, Orient: 1 monkey, 2 doves, 3 canaries, Mr. Bowman.

S. S. Lurline, San Francisco: 1 pony, H. K. Castle; 2 horses, Lieut. Lutebrant; 3 horses, Gen. Treat; 5 thoroughbred mares, 1 thoroughbred colt, 1 percheron stallion, 5 pure bred Kentucky jacks, Parker Ranch; 19 pure bred Ayreshire cows, 4 pure bred Ayreshire calves, W. H. Rice, Kauai; 1 pure bred Ayreshire bull, 3 pure bred Hampshire hogs, H. Hackfeld & Co.; 14 hogs, J. A. Bortfeld; 41 cts. poultry; 2 pure bred Hereford bulls, Harold Rice, Maui.

S. S. Wilhelmina, San Francisco: 1 dog, Mrs. E. D. Tenney; 65 cts. poultry.

S. S. Great Northern, San Francisco: 2 dogs, Mrs. C. Stansfield.

S. S. Manoa, San Francisco: 104 cts. poultry, various; 1 ct. poultry, D. H. Case, Maui; 1 ct. hogs, Maui Agricultural Company.

S. S. Niagara, Vancouver: 8 monkeys, 1 bear, 2 geese, J. H. Wise; 2 pheasants, B. Hollinger.

S. S. China, San Francisco: 1 dog, Mrs. H. B. Giffard.

Respectfully submitted,

L. N. CASE,
Assistant Territorial Veterinarian.

Division of Hydrography

Honolulu, January 4, 1917.

Board of Commissioners of Agriculture and Forestry, Honolulu, Hawaii.

GENTLEMEN:—The following report of operations of the Division of Hydrography during December, 1916, is submitted:

WEATHER CONDITIONS.

The month of December was marked by general wet weather over all islands, and a heavy storm on Kauai on December 18 which caused much damage to ditches, power plants, etc., and the loss of one life. From 11 a. m. December 18 to 11 a. m. December 19, the rainfall at Wainiha, Kauai, exceeded 25 inches. Sharp floods also occurred on Oahu on December 8 and 27, which were of short duration.

SPECIAL REPORTS.

A considerable part of the time of G. K. Larrison and E. E. Goo, and all of the time of R. C. Rice, R. D. Klise and C. T. Bailey was spent in preparing the report of the Territorial Water Commission which is to be submitted to the Governor of Hawaii in January. All except G. K. Larrison were paid from the Water Commission appropriation for the time expended on this work.

A paper pertaining to the administration, coöperation, personnel, field work, office work, relations to the public, and relations to the Washington office of the U. S. Geological Survey was prepared. This paper is to be presented at the annual conference of district engineers to be held January 15 to 20, 1917, at Denver, Colorado. A copy is attached hereto.

SPECIAL WORK.

G. K. Larrison spent December 12-16 on Kauai with the Superintendent of Forestry and the Commissioner of Public Lands, all of whom acted with other members of the Kauai Chamber of Commerce, as a special committee to investigate and report to the Kauai Chamber of Commerce, conditions relative to the proposed Waimea Canyon Park or camping place.

OPERATION AND MAINTENANCE WORK.

Kauai. Twenty-four stream and ditch measurement stations and eight rainfall measurement stations were visited. Thirty stream and ditch discharge measurements were made.

A heavy fence was constructed around the temperature measurement station recently established at Kokee. This instrument registered a minimum of 41 degrees F. on the morning of December 15.

A heavy rain storm accompanied by lightning and thunder visited the Island of Kauai on December 18. The water-stage recorder on the Hanapepe river was washed away and has not been recovered. The two foot-suspension bridges on the two branches of the Wainiha river in the lower valley were also destroyed.

Oahu. Fourteen stream and 13 rainfall measurement stations were visited and 7 stream measurements were made.

Blue print data pertaining to the flow of the North and South Forks of the Kaukonahua stream were furnished the U. S. Army and the Wahiawa Water Co., Ltd.

Maui. The first four days of the month were spent by G. K. Larrison in showing and dismantling the hydrographic exhibit at the Maui County Fair. One stream measurement station was visited.

H. A. R. Austin visited 18 stream and one rainfall measurement stations, made 18 discharge measurements and repaired and cleared about two miles of trail.

Hawaii. H. A. R. Austin spent three days collecting data and information relative to the Kohala and Kehena ditches.

Very respectfully,

G. K. LARRISON,
Superintendent of Hydrography.

A New Pineapple Pest of the West Indies

In the Journal of the Jamaica Agricultural Society, Vol. XX, No. 8, August, 1916, and Vol. XX, No. 9, September, 1916, notice is given of the appearance of a very serious pineapple pest, a weevil, which destroyed practically 75 per cent of the crop during the year preceding July 21, 1916. It attacks both plants and fruit.

The following is a copy of the articles above referred to:

PINEAPPLES.

New Weevil Injury in Above Rocks District.

The Above Rocks Branch Agricultural Society recently raised the subject of grubs attacking pineapples and the instructor, Mr. A. P. Hanson, brought the matter to the attention of the entomologist, Mr. A. H. Ritchie. These gentlemen paid a visit to the district on Friday, the 21st of July, and as a result of their investigations have unearthed another black weevil. It will be recalled that Messrs. Ritchie and Hanson were the principal figures in the black weevil of banana question in the initial stages last November. Black weevils would appear to be their specialty.

From the reports by the entomologist and the instructor on this visit now before us and from which we cull the following details, the weevil of pineapple is of serious importance as fully 75 per cent of the crop has during the year past been lost and the growers of the district are truly alarmed. In former years, settlers reckoned to make £8 to £12 from their pines but this crop has not been worth the candle. Not only, however, does the crop suffer but the supply of slips for replanting is becoming limited.

The weevil is large and black, about three times the size of the banana weevil and of the same general build. The grub resembles the grub of the brown weevil to be found in decaying banana stumps, being legless (as all weevil grubs), yellowish white, and with the peculiar swelling or bump on the posterior third of the body, but growing to much greater proportions.

So far the entomologist has been unable to get any evidence of this attack being formerly known to well-known pine growers. The growers in Above Rocks say they first noticed the trouble three to four years ago and that it has been growing worse each succeeding year. The question has now been raised for the first time, however. The plants, it is stated, are in otherwise splendid health. The attack is worst on the ratoon crop and

Pineapple borer from Jamaica, showing larva and damage to fruit.

some contend is confined to the ratoon crop—the plant pines not being attacked; this point, the entomologist remarks, must be looked into. The exact nature of the injury to the pineapple—fruit and plant—may be best gathered from the following extract from the report of the entomologist:

1. *Attack Upon Fruit.*

a. Upon the pineapple just developing, initial attack is indicated by exudation of pinkish jelly which coagulated in beads or groups of beads.

b. The opening of the burrows of the grub may be indicated by the voidance of pine frass of a yellow color.

c. The attack may be at any point of the fruit, from the collar of the crown down to the junction of fruit and stalk; the latter or the region of the latter is very common.

d. The fruit before it is shot from the "cabbage" may be attacked and hence never develop. The grub descends and the heart becomes filled with a jelly containing much pine frass. The condition might be called "dead-heart."

e. The fruit may be attacked just after being shot and the decaying brown shell of the fruit is all that remains. Such

frass, jelly, and decaying tissue is frequented by various scavengers, snails, beetles, flies, etc.

2. *Attack Upon Plants.*

a. Examples coming to my notice show entrance to the plant:

(1) By way of the fruit stalk, the channel leading from the decaying fruit, first attacked, down into the pine proper.

(2) At the base of a leaf; the younger grubs would appear to bore through the base of one or two leaves as indicated by tiny holes, but for the voidance of frass the grub later makes a bigger opening to the exterior and these openings, on the leaves being stripped, are most conspicuous. The accumulation of frass and jelly down among the leaves is a clear indication of attack.

(3) The plant may be entered before the fruit is formed and a "dead-heart" condition results.

(4) Once entered, the grub proceeds to tunnel out the entire plant and root system with the result that the plant is destroyed and dries out. The production of satisfactory "Slips" for replanting is impossible by such weakened stock.

(5) An egg was found by an entomologist neatly deposited in the fruit stalk, an inch and a half below junction of fruit and stalk.

General Health of Plants.—The health of the plants is excellent; the so-called pineapple "blight" so common on the Liguanea plain, is nowhere to be seen in the section visited and the pines are normally large and strong.

Variety of Pine Cultivated.—The variety grown principally is known as "Cheese Pine." "Sugar Loaf" is also grown. The fruit produced is of excellent flavor and texture. The price paid to growers by market women range to as high as 3s. 6d. per dozen for extra choice fruits.

Previous History.—There is a concensus of opinion that the trouble was noticed for the first time upon pines three to four years ago. From the time it was first noticed, the succeeding crops have been attacked in increasing degree and this crop has suffered most of all. The settlers are gravely concerned over the matter.

I have already shown material to Mr. Cradwick who was in town for the half yearly meeting of the J. A. S. He had never personally seen pines attacked in the manner nor heard of such injury.

Mr. John Barclay, Secretary, J. A. S., has no record of complaint of pines being attacked by weevil grubs.

Hon. Philip Cork who has had considerable experience with pine cultivation on Liguanea Plain, in answer to a communica-

tion on the subject, addressed him by the entomologist, states that he has no record of such insect attack as that described.

Mr. William Harris, Superintendent of Public Gardens, also stated on inquiry by the entomologist, that he had never had complaint of such insect attack nor personally seen it.

The weevil has been forwarded to specialists for scientific determination. Further investigations are proceeding and future reports on this new insect foe of pineapples are awaited with interest. (The Journal of the Jamaica Agricultural Society, Vol XX, No. 8, August, 1916, pages 316, 317, 318.)

During the past month, the entomologist has been in coöperation with Messrs. Hanson, Schleifer and Somerville, (agricultural instructors) on important work, and has made reports to the Director of Agriculture. From reports to us and the instructors, we cull the following details:

Pineapple Weevil In Above Rocks.—A second visit was paid to the district where pineapples have been badly attacked by a new black weevil. The following points are noteworthy: (a) In the previous report it was stated that some of the cultivators were of the opinion that plant or first year pines were not attacked but the entomologist now says this idea has no foundation in fact, as they too are attacked just as severely in cases. (b) The entomologist is of opinion that the belief of cultivators that certain varieties are immune to attack is not likely to prove true when all varieties are equally planted and the weevil has equal opportunity of all. (c) After stating that at the present time (August) the adult weevils are very few in number indeed, the first recommendations made is as follows: "There should be an extensive grubbing out of the affected pines. These should be split open with the cutlass so that the grubs will be exposed to weather and natural enemies—there are usually fowls, turkeys, hogs, lizards, frogs, etc., everywhere about the cultivations. The plants so treated will readily dry out and complete development of the immature stages will thereby be rendered impossible. The grubs are capable only of limited locomotion and are quite unable to search out another standing pine. In an attacked pine, there will be from two or three to five weevil grubs. If grubbed out now the development of as many weevils will have been prevented—these weevils be it noted would later take wing to clean or unattacked cultivations and produce the eggs for a succeeding generation which is capable of doing great injury to next crop. The number of weevils (adults) on the plants at the present time is pretty well negligible. With general coöperation in this work, much could be effected for the saving of next crop. Clean up.

The entomologist also advises an experimental pinery at Hope for a full study of the weevil so that other control measures may be devised. Mr. H. Q. Levy has informed Mr. Ritchie that in his long experience with pineapples in Jamaica he has had no experience with such weevil: Mealy bug was his only insect

foe.—(The Journal of The Jamaica Agricultural Society, Vol. XX, No. 9, September, 1916, pages 361 and 362.)

Since the opening of the Panama Canal all steamers by that route calling here in transit for coal or provisions, have been inspected. The appearance of this pineapple pest in the West Indies emphasizes the necessity of further strengthening our Division of Plant Inspection, for should this pest ever gain a foothold here our pineapple industry would get a severe setback.

A rapid method of kiln-drying eastern hemlock has been developed at the forest products laboratory at Madison, Wisconsin, whereby shiplap can be dried green from the saw to shipping weight in forty-eight hours. By this method two-inch plank can be dried to shipping weight in six to eight days.

It is estimated that four-fifths of the water available for irrigation and domestic use in the State of Oregon comes from the timber clad slopes of the national forests. .

Fires burned twenty-five million board feet of timber on the National forests of Oregon, Washington and Alaska in 1916. The forest service fought 1176 fires in this region during the year at an expense of $19,000.

The plantings of the Oriental timber bamboo in northern Florida and Louisiana have grown to a height of 25 feet, and there is no longer any question about their producing in the United States good canes comparable to those which they produce in China and Japan. A quick method of their propagation has been worked out so that it will be now possible to supply large enough quantities of the young plants to set out many small areas throughout the South, from the Carolinas to California, wherever there is sufficient moisture and the land is not too high priced to admit of their cultivation.

Public Forests for Recreation

That over a million and a half of people use the national forests as playgrounds each year was the statement made by Henry S. Graves, chief of the forest service, before the American Forestry Association in Washington this month. "Located as they are," said Mr. Graves, "the National Forests comprise many regions of superb scenery and unexcelled recreation attraction. In a very real sense these attractions of the forests constitute a natural resource that must be safeguarded, utilized and developed."

Mr. Graves stated that a quarter of a century had passed since the establishment of the first national forests by a law which marked the beginning of a new and more enlightened method of public land administration. The nineteenth century land system, he said, was one wholly of land distribution, which was successful as applied to agricultural lands, but unsuccessful as applied to non-agricultural lands chiefly valuable for growing timber. The keynote of the present-day policy is to secure such a disposition, use and development of the public lands as will render a maximum service to the public. "The country has recognized that public lands of chief value for forest purposes and essential to protect water resources should remain under public control," Mr. Graves continued. "The struggle is now on as to who shall own and control the public water-power sites, the coal, oil, phosphate and potassium deposits and the common grazing lands that are not suited to development by individuals under any of the homestead laws."

More and more of the larger private holdings are being posted with "No Trespassing" signs, Mr. Graves said, and are closed to the public. "The closing of private lands points to the value of publicly owned forest lands where people living in cities and hot agricultural regions can find an opportunity for the refreshment and recreation that can be secured by a sojourn in the forests."

Innumerable localities on the National Forests, which are not generally known, have a wealth of scenic beauty, Mr. Graves said. A very practical problem, he stated, is that of opening up and making these great public properties available for as wide use as possible by people of little means as well as by the wealthy. In the national forests of Colorado alone, it is said there were last summer 676,000 visitors.

"The recreation features of the National Forests are fostered in a variety of ways," Mr. Graves further remarked. "Areas of scenic value are set aside as camping sites and are withdrawn from any use which would reduce their beauty.

Roads and trails are built by the forest service to open up points of scenic interest, streams are stocked with fish, and sites for summer homes can be leased for long periods."

While the Hawaiian forest service has no revenues for road construction, it is not oblivious to opportunities for opening territorial forests as places of recreation. As evidence see the January report of the superintendent of forestry in this number. Action such as that being taken for making the gorgeous scenery of Waimea canyon on Kauai available as summer camping sites will no doubt in time be extended to other sublime and salubrious regions of the Territory's forested domain. This, indeed, is a movement that may be predicted to develop tourist promotion results not surpassed by those of the exploitation of any other of the many awe-inspiring, eye-delighting, health-recruiting, soul-soothing and research-inviting features that Mother Nature has liberally distributed throughout this archipelago.

Philippine Woods

From the Bureau of Forestry, Manila, has come a copy of its latest publication, being Bulletin 14, entitled, "Commercial Woods of the Philippines: Their Preparation and Uses." This is by far the most comprehensive work so far published on the subject and, from the point of view of the wood-user, also the most practical. The book consists of five parts dealing with different phases of the subject. Part I is a concise description of the forests and of lumbering conditions in the islands; Part II, a discussion in popular language of the physical and mechanical properties and the structure of wood; Part III, a very comprehensive discussion of uses, the different purposes to which wood is put being arranged in alphabetical order, with frequent cross-references; Part IV gives, also in the least possible technical form, directions for the identification of woods, and Part V, which occupies more than half of the book, gives detailed descriptions of about 360 Philippine woods, with notes on their mechanical properties and workability, their distribution in the islands, local names, uses, supply and approximate prices. There is also a general index, one of scientific names and one of all the official, commercial and local names.

This bulletin is sold by the Philippine Bureau of Forestry at $1.00 U. S. currency. Money orders should be made out to "The Director of Forestry, Manila, P. I."

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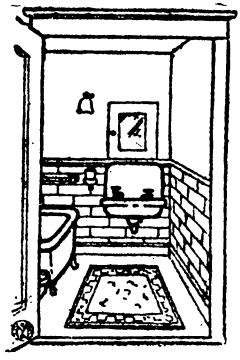

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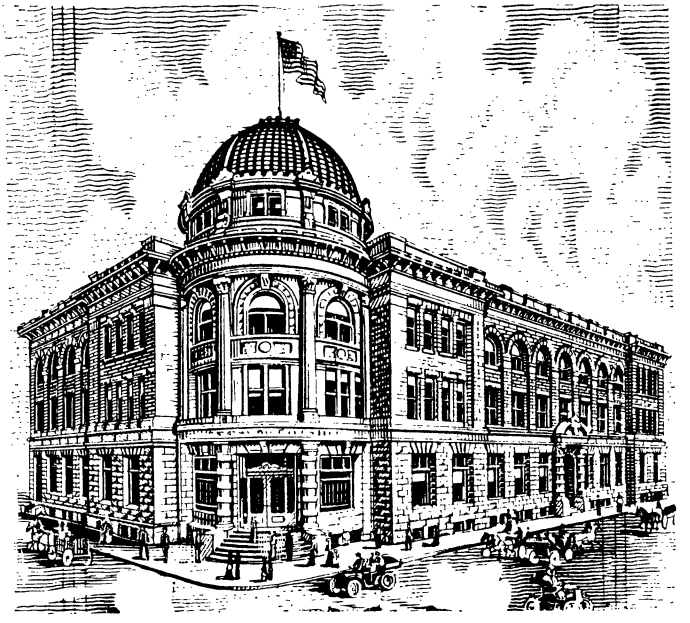

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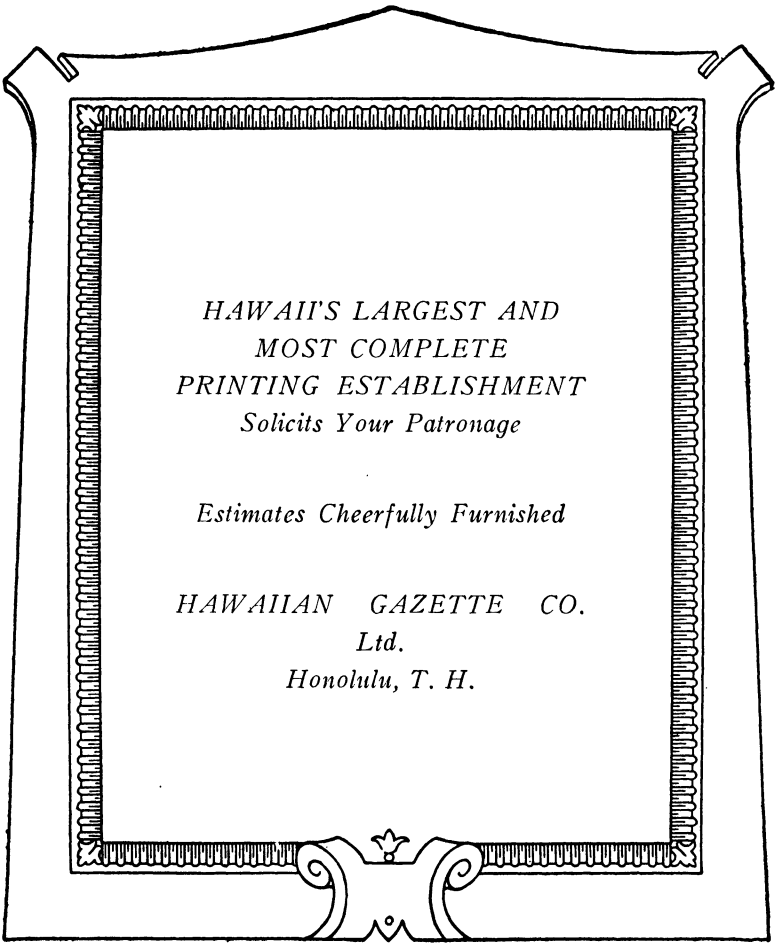
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